

REMARKS

Claim Rejections

Claims 1 and 3 are rejected under 35 U.S.C. §102(b) as being anticipated by Snowman (US 4,226,533). Claims 2, 4 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Snowman. Claims 6-14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Snowman and further in view of Ushiro et al. (US 4,939,588).

Drawings

It is noted that the Examiner has accepted the drawings as originally filed with this application.

Claims

It is believed that claims 1-14 specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

The primary reference to Snowman discloses an optical particle detector for detecting the airborne particles of combustion. As shown in Fig. 1, the optical particle detector comprises the cylindrical compartments (11, 12, and 13) connected in order. The light source (14), the aperture (15) for the light source (14), and the beamforming lens (16) are disposed in the anterior chamber (11) which is sealed for avoiding the admission of dust. The measurement chamber (12) has two openings (10) for the admission of the airborne particles, two apertures (17, 18) for the admission of light from the anterior chamber (11), and the output light stop (19). The posterior chamber (13) comprises the output lens assembly (20, 21, 22) which are positioned coaxially. The posterior chamber (13) is also sealed against dust. Therefore the light reflected and condensed by the reflector (26) and the condensing lens (27) of the light source (14) can be transmitted to the beamforming lens (16) through the aperture (15) and enter the measurement chamber (12) and then detect the airborne particles of combustion distributed over the range of the dash-dotted

lines (29) by reflecting light to the output lens assembly (20-22) and focusing upon the photodetector (23). The optics are designed for highlight gathering efficiency consistent with minimum space requirements and the internal design minimizes scattered light to achieve maximum smoke detection sensitivity.

On page 2 of the outstanding Office Action, the Examiner considers the cylindrical compartments (11-13) of Snowman to be the same as the hollow frame of the present invention. However, in Snowman, as described in col. 2 lines 54-56 and col. 3 lines 59-60, the anterior chamber (11), the measurement chamber (12), and the posterior chamber (13) are cylindrical shape. It is to be understood that the shape of the cross-section should be the same as the shape of the object; therefore, in Snowman, the cross-sections of the anterior chamber (11), the measurement chamber (12), and the posterior chamber (13) should be cylindrical. However, as recited in the independent Claim 1 of the present invention, the hollow frame has a rectangular cross-sectional configuration. Therefore the cylindrical compartments (11-13) are different from the hollow frame of the present invention.

On page 2 of the outstanding Office Action, the Examiner cites col. 5, lines 45-50, and col. 6, lines 64-67, of Snowman and interprets the apertures (17, 28, 18) of Snowman as being the same as the first and second openings of the present invention. However, as described in col. 4, line 4, of Snowman, the aperture (18) is internal to the chamber, and the apertures (17 and 28) are located between the anterior chamber (11) and the measure chamber (12) as shown in Fig. 1. While in the present invention, as recited in Claim 1, the first and second rectangular openings are located on opposing ends of the hollow frame. Since none of the apertures (17, 18, 28) is located at the opposing ends of the cylindrical compartments (11-13), the apertures (17, 18, 28) of Snowman and the first and second openings of the present invention are apparently dissimilar.

Although Snowman discloses the optical particle detector having plural lenses, the location of the lenses in Snowman are not the same as those of the present invention. As shown in Fig. 1 of Snowman, only the convex of the lens (16) is set into the apertures (17 and 18), but the lenses (20-21) are neither located between the apertures (17 and 28), nor the apertures (18 and 28 or 18 and 17). Snowman does not teach the flat type light condensing device comprises a plurality

of lenses located within the hollow frame between the openings at opposite ends,
as does claim 1 of the present invention.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Snowman does not disclose each and every feature of Applicant's claims and, therefore, could not possibly anticipate these claims under 35 U.S.C. § 102. Absent a specific showing of these features, Snowman cannot be said to anticipate any of Applicant's claims under 35 U.S.C. § 102.

The secondary reference to Ushiro et al. discloses an electronic copying machine for making a hard copy of a remote original. As shown in Figs. 1 and 3, the electronic copying machine comprises a housing 1 with three slits (1a, 1b, and 1d). There are also a plurality of lenses (11, 12, 14, and 16) located in the housing, wherein the lenses (11, 12, and 14) are set for converging the light from the halogen lamp (10) as a thin vertical line of light; then the light is reflected by the fixed mirror (15), and the vertical line of light is expanded in width by lens (16) and directed to the scanning mirror (17) for scanning the front surface of the remote writing board (65), as described on col. 4, lines 37-44, of Ushiro et al.

On pages 5 and 6 of the outstanding Office Action, the Examiner states that Snowman discloses every feature of the independent Claim 8 of the present invention except the OE converter, and cites Ushiro et al. for disclosing an OE converter. Although, Ushiro et al. disclose the OE converter, the present invention is distinguishable from Snowman and these dissimilarities are not taught by Ushiro et al.

First of all, as mentioned in the foregoing descriptions, the cylindrical compartments (11-13), the apertures (17, 18, and 28), and the lenses (16, 20-22) in Snowman are different from the hollow frame, the openings, and the lenses of the present invention, respectively. In the Office Action, the Examiner regards the lens (27) of Snowman as being equivalent to the light condensing device of the present invention. As described in Snowman, col. 4, lines 54-57, the lens (27) is used for producing light over a solid angle, while in Ushiro et al., as described in col. 4, lines 37-45, the light from the halogen lamp is converged by the condenser lens assembly

(13) and the cylindrical lens (14), reflected by the fixing mirror (15), expanded by the cylindrical lens (16) and then directed to the scanning mirror (17) for scanning the front surface of the remote writing board. Therefore none of the cited references discloses the feature that the light condensing device is used for imaging as recited in Claim 8 of the present invention.

Furthermore, the Examiner also regards the object numbered 15 in Snowman as being equivalent to the lens mounted in the hollow frame of the present invention. However, as described in col. 3, line 60, of Snowman, the object numbered 15 actually represents an aperture. The aperture (15) in Snowman is not equal to the lens of the present invention. Therefore, a combination of Snowman and the OE converter of Ushiro et al. does not produce the optical path device for optical equipment as recited in Claim 8 of the present invention.

Neither Snowman nor Ushiro et al. disclose, or suggest a modification of their specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious Applicant's claims.

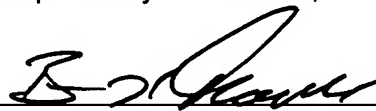
Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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